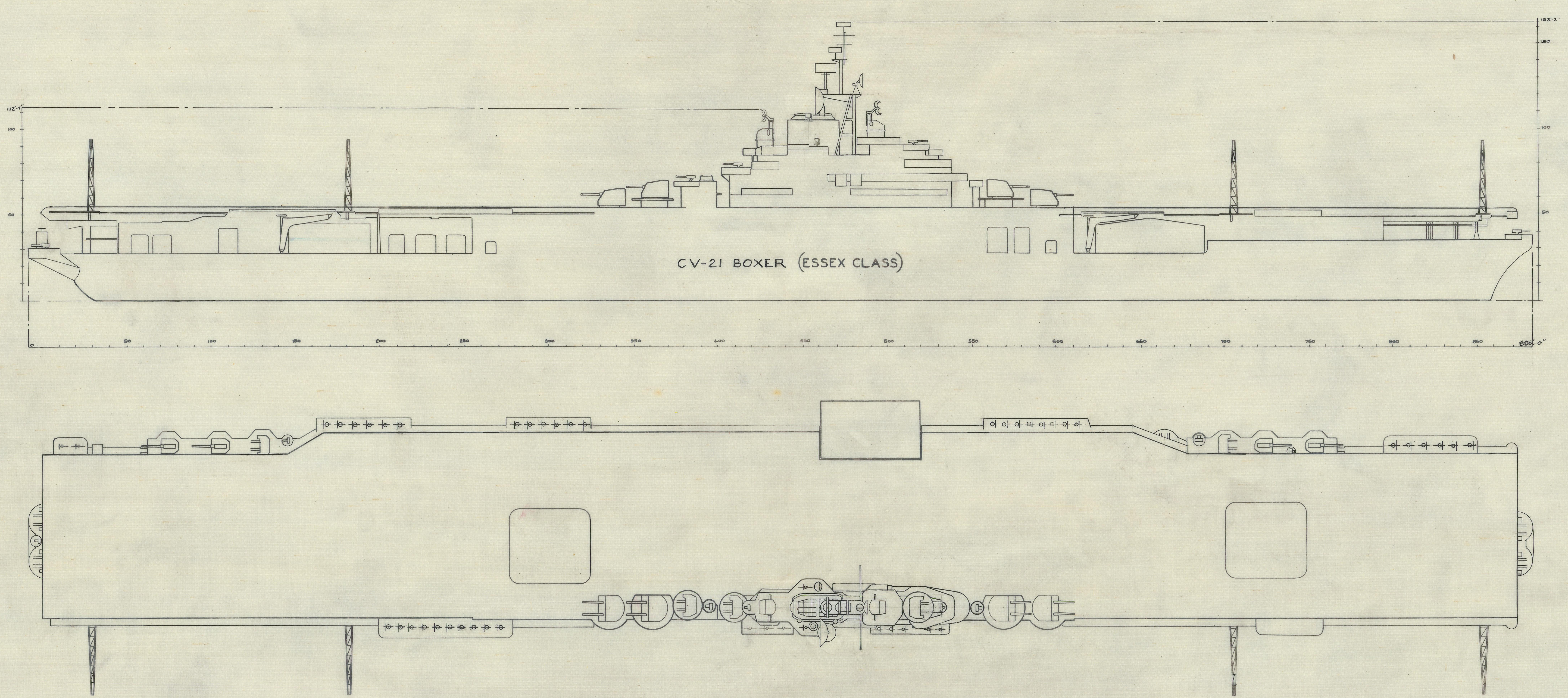
21
BOXER

CV-21



NEWPORT NEWS S.&D.D. CO.
DATE 2-1-45

GENERAL NOTES

1. THIS PLAN IS DEVELOPED IN ACCORDANCE WITH S.O.S. LETTER 928 (T) OF MAY 9 1942. QUOTING BU. SHIPS MULTP. ADD. RESTR. LET. S28-4 (440) OVER EN28/A2-11 DATED MAY 1, 1942, ON OUR FILE M/1031.
2. THIS PLAN SUPERSEDES & REPLACES ℞. 10-982 FOR 410H (CV-21).
3. THIS PLAN INCORPORATES CHANGES IN DESIGN AS AUTHORIZED BY S.O.S. LET. CV9 CLASS/S1-6/S1-1 (T) OF 2-19-43 QUOTING BUSHIPS LET. C-CV9 CLASS/S1-6(S12) OF 2-16-43 (CHANGES a, c, f, g, h, i, j & m).

REFERENCES

PROFILE & SKYVIEW - DD 356 & 361 — BU. OF S. No. 017180.

CV-21	410H	
NAME AND NO.	N.N. HULL No.	NAME AND NO. OF VESSEL

THE NEWPORT NEWS SHIPBUILDING & DRYDOCK COMPANY
NEWPORT NEWS, VIRGINIA.
HULL DEPARTMENT

410H — **DRAWING No. 10-1465**

SCALE 1/32" = 1 FT. DATE SCHED. ____ DATE COMP. 2-8-45
DRAWN E. E. SPICER. EXAMINED A H Lyken
CHECKED R.D. MASON AUTHORIZED J P Comstock
CHARGEMAN D A Lloyd DATE Feb. 7. 1945

ACTION BY BUREAU OF SHIPS	APPROVED
LETTER FILE	DATE 2-12-45
	E L Gayhart — FOR SUPERVISOR OF SHIPBUILDING

FORWARDED TO BUREAU. DATE 2-15-45 NO. 528 (493)

FINISHED PLAN
EXAMINED AND FOUND CORRECT E. L. Gayhart FOR SUPERVISOR OF SHIPBUILDING
DATE May 3, 1945

PROFILE & SKYVIEW CV-21
ESSEX CLASS

Fr 1

BUREAU OF SHIPS PLAN NUMBER 522425

CV-21 CV-21 CV-21

MARK	PANEL	ALTERATION	DATE	O.K.	AUTHD.	APPVD.	DATE
A	GENL.	THIS PLAN SUPERSEDES DR. 330-485 FOR CV21, 32 & 46 (410, 446 & 7H) & CV47 (BETH.) SEE NOTES 2 & 4 THIS RELEASES HOLD-UP 1665.	2/3/5	DAL	WRK		

MARK	PANEL	B.S.C. ALTERATION	BY	CONT. DATE	CONT. APPD	GOV'T. DATE	GOV'T. APPD
		PLAN MADE APPLICABLE TO CV47	22 227				
1	3, 5	ULTRA VIOLET LIGHT BOX ON AFT EDGE OF SIGNAL PLATFORM RELOCATED TO CLEAR INTERFERENCE WITH SPRING CASE BKT. ALT. 1 MADE IN ACCORD. WITH N.N.S. ALT. 1.	22 109				
2	3, 6, 8	LIFE NET FRAME REVISED & EXTENDED TO FR. 208½. TO SUIT ELIMINATION OF 20 M/M GUN PLATFORM FRS. 207-212. DUE TO GUN CHANGE AUTHORIZED BY S. of S. LET. CV9 CLASS/S74-1-1/S74 OF 2-2-45 FWD. BU. SHIPS CONF. MULTI. ADDR. LET. CV9 CLASS /S74(512) OF 1-30-45. ALT. 2 MADE IN ACCORD. WITH N.N.S. ALT. 2.	22 109				
3	2, 4, 5	COURSE OF TRIGGER PULL LINE ITEM 36 ALTERED; SHEAVE ITEM 31 AFT. FR 208 DELETED & SHEAVE ITEM 25 ADDED FR 207 PLAN VIEW, ELEVATION & SECT. "3-B" REVISED ACCORDINGLY. ALL TO SUIT REF. 4 & REARRGT. DUE TO GUN CHANGE AS AUTHORIZED BY S. OF S. LET. CV9 CLASS/S74-1-1/S74 OF 2-2-45 FORD. BU. SHIPS CONF. MULTI. ADDR. LET. C-CV9 CLASS/S74(512) OF 1-30-45. ALT. 3 MADE IN ACCORD. WITH N.N.S. ALT. 3.	22 109	30 MAY '45	ABB/H		
4	2	FLAG HOLDERS ON NAVIGATING BRIDGE BULWARK RELOCATED FROM ABT. FR. 89 TO ABT. FR. 90 (INB'D SIDE OF ISLAND) TO CLEAR WINDSHIELD AS SHOWN ON REF. #5. ALT. IN ACCORD WITH N.N. ALT. 4					
5	1, 2, 3	SECTIONS 3C & 3-D DELETED & SECT. 2-B & 2-C ADDED TO SHOW REVISED STRUCTURE IN WAY OF LIFE NET DUE TO ELIMINATION OF 20 M.M. R.S. ROOM BHD. (PART OF GUN CHANGE) ALL TO SUIT REF. 6 & 7 & AUTHORITY "A". REF. 6 & 7 & AUTHORITY "A" ADDED. ALT. IN ACCORD WITH N.N. ALT. 5					
6	4, 5, 7	PADEYES ON UNDERSIDE OF WALKWAY INDICATED IN PLAN VIEW AT TOP OF PANEL #7 & IN ELEVATION LKG. INBD. AT BOTTOM OF PANELS 4 & 5, TO SUIT SECTIONS 2C & 3C. ALT. IN ACCORD WITH N.N. ALT. 6	116	22 OCT '45	ABB/H		
7	1, 3, 4, 5, 6	TRIGGER & SUPPORT DELETED & STOWAGE ADDED FOR SPRING MECHANISM IN ACCORDANCE WITH AUTHORITIES B & C. AUTHORITIES B & C ADDED. ALT. IN ACCORD WITH N.N. ALT. 7.					
8	2, 6	KEY & KEYWAY DET. "6-D" ADDED IN WINDSCREEN SHAFT TO SUIT REF. 8 REF. 8 ADDED. ALT. IN ACCORD WITH N.N. ALT. 8					

NET. AREA 30" × 116" = 24.15 □'

AUTHORITY:-

A. S. OF S. LET. CV9 CLASS/S74-1-1/S74 OF 2-2-45 FORD BU. SHIPS CONF. MULTI. ADDR. LET. C-CV9 CLASS/S74(512) OF 1-30-45

B. S. OF S. LET. CV9 CLASS/S24-11 OVER CV32 & 46/S24-11 OF 7-17-45

C. S. OF S. LET. CV9 CLASS/S24-11 OVER CV32 & 46/S24-11 OF 7-10-45 QUOTING NORF. N.Y. LET CV/CVE/CVL/S24 (17-10-6-MD B4B) MULTI-ADDR OF 7-2-45 & ENCLOSING BU. SHIPS LET CV/S24(5812): CVL/S24: CVE/S24 OF 5-21-45

GENERAL NOTES:-

1. FOR BILL OF MATERIAL AND DETAILS NOT SHOWN ON THIS DRAWING, SEE SIGNAL PLATFORM DETAILS - DRAWING NUMBER 330-673.
2. THIS PLAN SUPERSEDES AND REPLACES PLAN 330-485 ~~FOR CV21, 32 & 46 (410, 446 & 7H) & CV47 (BETH.)~~ AND INCLUDES ALL APPLICABLE ALTERATIONS ON THE SUPERSEDED PLAN UP TO AND INCLUDING ALTERATION № 4.
3. THIS PLAN INCORPORATES CHANGES IN DESIGN AS AUTHORIZED BY S.O.S. LET. CV9 CLASS/S1-6/S1-1 (T) OF 2-19-43 QUOTING BU. SHIPS LET. C-CV9 CLASS/S1-6 (512) OF 2-16-43. (CHANGE j)
4. THIS PLAN DEVELOPED TO SUIT S.O.S. LET. CV9 CLASS/S8-2 (I) OVER CV32 & 46/S8-2 OF 12/5/44 QUOTING BUSHIPS LET. CV38/S8(512) OF 10/30/44 AUTHORIZING CHANGE IN LIFE NETS (HULL CHANGE A-1(T)), & S.O.S. LET. CV9 CLASS/S24-11 (T) OVER CV32 & 46/S24-11 OVER CVB41 CLASS/S24-11 OF 12/23/44, FORWARDING BUSHIPS LET. CVB41-43/S24-11 (512) OVER CV9 CLASS/S24-11 OVER CVL 48-49/S24-11 OVER CVE105 CLASS/S24-11 OF 12/19/44 ALTERING WINDSCREEN FROM SPRING- TO POWER-OPERATED (HULL CHANGE W-4-(11).

NO.	REFERENCES	N.N. NO.	BUSHIPS NO.
8	LANDING OFFICERS SIGNAL PLATF. POWER OPER. WINDSCREEN-DK. BEARING AUTOMATIC LATCH ASSM'E DETAILS	201-929	638600
7	MISC. PLATF'S & WALKWAYS BEL. FL. DK AFT. FR. 73 P	114-86	CV32 S1106 557242
6	OUT.B'D LONG. GDRS UNDER FL. DK AFT. FR. 149	115-206	CV32-S1106 556590
5	PORTABLE WINSHIELD FOR PRIMARY FLY CONTROL STATION & AIR DEFENSE FORD	127-733	394670
4	LANDING OFFICERS SIGNAL PLAT.F POWER OPERATED WIND SCREEN - ARGT. OF OPERATING GEAR.	201-880	638539 F
3	LEADSMAN PLATFORM - ARRGT. & DETAILS	330-233	396169 F
2	LANDING OFFICERS SIGNAL PLATFORM POWER OPERATED WINDSCREEN - DECK BEARING ASSEM. & DETAILS	201-883	638541 F
1	SIGNAL PLATFORM, FLIGHT DK. - DETAILS	330-673	CV21-S2406 556413 F

NAVY DEPT. NO.	NEWPORT NEWS HULL №	NAVY DEPT. NO.	
~~CV46~~	~~447H~~		
~~CV32~~	~~446H~~		
~~CV21~~	~~410H~~	CV47	H-1570

BETHLEHEM STEEL CO.-SHIPBUILDING DIVISION
QUINCY YARD — QUINCY, MASS.
HULL DEPARTMENT
JOB No. 1570-57 PLAN No. 1570-330-672

~~NEWPORT NEWS SHIPBUILDING & DRY DOCK COMPANY~~
~~NEWPORT NEWS, VIRGINIA~~
~~HULL DEPARTMENT~~

410H
446H
447H

DRAWING No. 330-672

SCALE AS NOTED = 1 FT. DATE SCHED. 1-15-45 DATE COMP. 2-5-45
DRAWN J. B. MONTGOMERY EXAMINED WRK Atkinson
CHECKED AUTHORIZED J. McConnell
CHARGEMAN D. A. Lloyd DATE Feb. 7. 1945

ACTION BY BUREAU OF SHIPS — APPROVED
LETTER FILE
DATE 9. 23. 45
FOR SUPERVISOR OF SHIPBUILDING

FORWARDED TO BUREAU DATE NO.

PLAN
EXAMINED AND FOUND CORRECT — SUPERVISOR OF SHIPBUILDING
DATE

SIGNAL PLATFORM - FLIGHT DECK - ARRANGEMENT -

CORRECTED PLAN

BUREAU OF SHIPS PLAN NUMBER
CV21-S2406-556412F ALT. 8

AIRCRAFT CARRIER
CV 47

GROUP

File M.K.

GENERAL NOTES

NEWPORT NEWS SHIPBUILDING & DRY DOCK COMPANY
NEWPORT NEWS, VIRGINIA

HULL DEPARTMENT

410H
446H
447H

DRAWING No. 330-672

SCALE AS NOTED = 1 FT. DATE SCHED. 1-15-45 DATE COMP. 2-5-45
DRAWN J. B. MONTGOMERY EXAMINED
CHECKED AUTHORIZED
CHARGEMAN DATE Feb. 7. 1945

ACTION BY BUREAU OF SHIPS	APPROVED
LETTER FILE	DATE 9. 23. 45
	FOR SUPERVISOR OF SHIPBUILDING

FORWARDED TO BUREAU — DATE — NO.

PLAN

EXAMINED AND FOUND CORRECT — SUPERVISOR OF SHIPBUILDING
DATE

SIGNAL PLATFORM - FLIGHT DECK - ARRANGEMENT -

BUREAU OF SHIPS PLAN NUMBER (BASIC)
CV21-S2406-556412 ALT. A-Y 9

CV21	410H	CV47 (BETH.)
NAVY DEPT. NO.	NEWPORT NEWS HULL No	NAVY DEPT. NO.

—	CV33-S2411 337494	—
330-298	396324	2406VAH
—	CV31-S6405-337285	—
201-880	638539	2411 VAD
201-884	638547	2411 VAC
201-879	638538	2411 VAA
330-300	396335	2406 VAE
330-293	396169	2408 VAF
201-883	638541	2411 VAB
330-673	CV21-S2406 556413	—
N.N. No.	BUSHIPS No.	

MATERIAL RECORD.

DESCRIPTIONS	JOB ORDER NO.	BM. NO.	COST GROUP	WT. GROUP
FOR BM SEE PLAN				
CV 21-S2406-556413				

CHECKED FOR MATERIAL: DATE: 4/21/45

NAVY YARD, NEW YORK
SUPERVISOR

APPROVED FOR CV13

HEAD NAVAL ARCHITECT — DESIGN SUPERINTENDENT
DATE May 18 '45 J.O.# 657D-24/45-9903/3315 AUX. IDC1350

NAVY YARD, NEW YORK
SUPERVISOR

APPROVED FOR CV33, 34, 36-40 INCL. & 45

HEAD NAVAL ARCHITECT — ASST. DESIGN SUPERINTENDENT
DATE May 24 '45

RECORD OF PRINTS ISSUED.

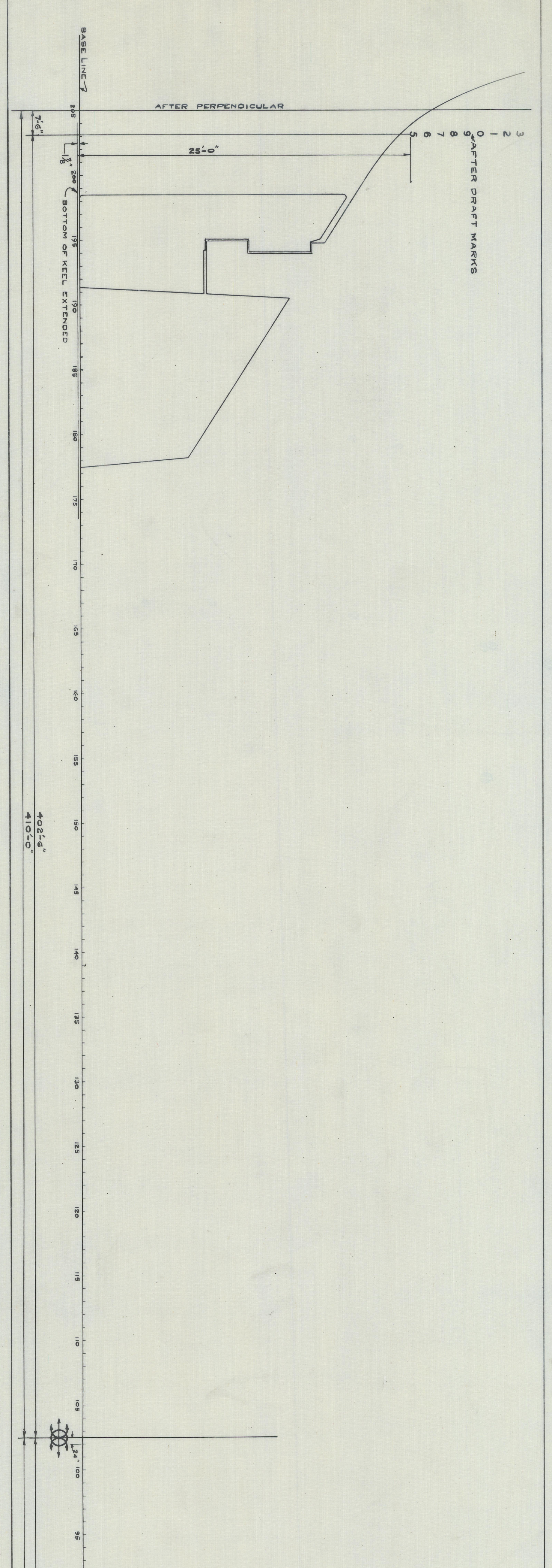
CV33-BOARD I & S ITEM 22er.

PROJ. 27A, BASIC CH. #II

THIS PLAN SUPERSEDES N.Y.N.Y. PLAN # CV203140-2406 VAE, BU# 396335 FOR CV33-40 INCL. & 45

BAYONNE ANNEX BLUE PRINT ISSUE

CV21-S2406-556412



CV 21
DRAFT MARKS

HORIZONTAL SCALE 1/16" = ONE FOOT
VERTICAL SCALE 1/4" = ONE FOOT

A.P. F.P.

DRAFT	ADD FOR 1 FT. TRIM BY STERN ON 820'-0" LENGTH :- TONS	DISPLACEMENT TONS S.W.	TONS PER INCH	DRAFT
31'-0"	87.3	40341	136.9	31'-0"
	87.1	40204	136.8	
	86.8	40067	136.7	
9"	86.5	39931	136.6	9"
	86.3	39794	137.5	
	86.0	39656	137.3	
6"	85.7	39519	137.1	6"
	85.5	39382	137.0	
	85.2	39245	136.9	
3"	84.9	39108	136.8	3"
	84.7	38971	136.7	
	84.4	38836	136.6	
30'-0"	84.1	38699	136.5	30'-0"
	83.9	38562	136.5	
	83.6	38426	136.4	
9"	83.3	38290	136.3	9"
	83.1	38153	136.2	
	82.8	38017	136.1	
6"	82.5	37881	136.0	6"
	82.2	37745	135.9	
	81.9	37609	135.8	
3"	81.6	37473	135.7	3"
	81.3	37338	135.7	
	81.0	37202	135.6	
29'-0"	80.7	37066	135.5	29'-0"
	80.4	36931	135.4	
	80.1	36796	135.3	
9"	79.8	36661	135.2	9"
	79.6	36526	135.1	
	79.3	36391	135.0	
6"	79.0	36256	134.9	6"
	78.7	36121	134.8	
	78.4	35986	134.7	
3"	78.1	35851	134.7	3"
	77.8	35717	134.6	
	77.5	35582	134.5	
28'-0"	77.2	35448	134.4	28'-0"
	76.9	35313	134.3	
	76.6	35179	134.2	
9"	76.3	35045	134.1	9"
	76.0	34912	134.0	
	75.7	34778	133.9	
6"	75.4	34644	133.9	6"
	75.1	34510	133.8	
	74.8	34376	133.7	
3"	74.4	34242	133.6	3"
	74.1	34109	133.5	
	73.8	33975	133.4	
27'-0"	73.4	33842	133.3	27'-0"
	73.1	33708	133.2	
	72.8	33575	133.1	
9"	72.4	33442	133.0	9"
	72.1	33309	132.9	
	71.8	33176	132.8	
6"	71.4	33043	132.7	6"
	71.1	32912	132.6	
	70.8	32779	132.5	
3"	70.4	32647	132.4	3"
	70.1	32514	132.4	
	69.8	32382	132.3	
26'-0"	69.4	32250	132.2	26'-0"
	69.1	32117	132.1	
	68.8	31985	132.0	
9"	68.4	31853	131.9	9"
	68.1	31721	131.7	
	67.7	31590	131.6	
6"	67.3	31458	131.5	6"
	67.0	31327	131.4	
	66.6	31196	131.3	
3"	66.2	31065	131.2	3"
	65.9	30934	131.1	
	65.5	30803	131.0	
25'-0"	65.1	30672	130.9	25'-0"
	64.8	30541	130.7	
	64.4	30410	130.6	
9"	64.0	30279	130.5	9"
	63.7	30149	130.4	
	63.3	30018	130.3	
6"	62.9	29888	130.2	6"
	62.6	29759	130.0	
	62.2	29629	129.9	
3"	61.8	29499	129.8	3"
	61.4	29369	129.7	
	61.1	29240	129.5	
24'-0"	60.8	29110	129.4	24'-0"
	60.4	28981	129.3	
	60.0	28851	129.2	
9"	59.7	28722	129.0	9"
	59.3	28593	128.8	
	58.9	28464	128.7	
6"	58.5	28337	128.6	6"
	58.1	28208	128.4	
	57.7	28080	128.3	
3"	57.3	27951	128.2	3"
	56.9	27823	128.0	
	56.5	27695	127.9	
23'-0"	56.1	27567	127.8	23'-0"
	55.6	27439	127.7	
	55.2	27312	127.6	
9"	54.8	27184	127.5	9"
	54.3	27058	127.3	
	53.9	26930	127.2	
6"	53.5	26803	127.0	6"
	53.0	26676	126.9	
	52.6	26549	126.8	
3"	52.2	26422	126.7	3"
	51.7	26296	126.5	
	51.3	26169	126.4	
22'-0"	50.9	26043	126.3	22'-0"
	50.4	25917	126.1	
	49.9	25791	126.0	
9"	49.5	25665	125.8	9"
	49.0	25540	125.6	
	48.5	25414	125.5	
6"	48.1	25289	125.4	6"
	47.6	25163	125.2	
	47.1	25038	125.0	
3"	46.7	24913	124.8	3"
	46.2	24788	124.7	
	45.7	24664	124.6	
21'-0"	45.3	24540	124.5	21'-0"
	44.8	24415	124.4	
	44.3	24291	124.2	
9"	43.9	24167	124.0	9"
	43.4	24043	123.8	
	42.9	23919	123.7	
6"	42.5	23795	123.6	6"
	42.0	23672	123.4	
	41.5	23549	123.2	
3"	41.0	23426	123.0	3"
	40.5	23303	122.8	
	40.0	23180	122.6	
20'-0"	39.6	23058	122.4	20'-0"
	39.1	22935	122.3	
	38.6	22813	122.2	
9"	38.2	22691	122.1	9"
	37.7	22570	121.9	
	37.2	22448	121.8	
6"	36.8	22326	121.6	6"
	36.3	22204	121.5	
	35.8	22083	121.3	
3"	35.3	21962	121.1	3"
	34.8	21840	120.9	
	34.3	21720	120.8	
19'-0"	33.8	21600	120.6	19'-0"
	33.3	21479	120.5	
	32.8	21359	120.3	
9"	32.3	21238	120.1	9"
	31.8	21118	120.0	
	31.3	20998	119.8	
6"	30.8	20878	119.6	6"
	30.3	20759	119.5	
	29.8	20640	119.3	
3"	29.4	20521	119.1	3"
	28.9	20402	119.0	
	28.4	20283	118.9	
18'-0"	28.0	20164	118.7	18'-0"
	27.5	20045	118.6	
	27.0	19927	118.4	
9"	26.5	19808	118.2	9"
	26.0	19691	118.0	
	25.5	19573	117.8	
6"	25.0	19455	117.6	6"
	24.5	19338	117.5	
	24.0	19220	117.3	
3"	23.6	19103	117.2	3"
	23.1	18986	117.0	
	22.7	18869	116.8	
17'-0"	22.2	18753	116.6	17'-0"
	21.7	18636	116.4	
	21.2	18520	116.3	
9"	20.8	18404	116.2	9"
	20.4	18287	116.0	
	19.9	18171	115.9	
6"	19.5	18056	115.7	6"
	19.1	17940	115.5	
	18.6	17825	115.3	
3"	18.2	17710	115.2	3"
	17.8	17595	115.0	
	17.3	17480	114.8	
16'-0"	16.9	17364	114.6	16'-0"

AFTER DRAFT MARKS
FOR'D DRAFT MARKS
MID-PERPENDICULAR
CENTER OF FLOTATION
ADDITION TO DISPLACEMENT FOR ONE FOOT TRIM BY STERN IN TONS S.W.
EVEN KEEL DISPLACEMENT IN TONS S.W.
TONS OF S.W. PER INCH OF IMMERSION

7'-6" 3'-5"
402'-6" 406'-7"
410'-0" 410'-0"

A.P. HORIZONTAL SCALE 1 IN. = 90 FT. M.P. VERTICAL SCALE 3 IN. = 1 FT. F.P.

INSTRUCTIONS FOR USING DRAFT DIAGRAM

1. OBSERVE THE DRAFTS FORWARD AND AFT AT THE DRAFT MARKS OR OBTAIN THEM FROM THE DRAFT AND TRIM INDICATOR.
2. MARK THESE DRAFTS ON THE PROPER DRAFT SCALES.
3. DRAW A STRAIGHT LINE BETWEEN THESE POINTS. THE POINT WHERE THIS LINE INTERSECTS THE MID-PERPENDICULAR LINE IS THE MEAN KEEL DRAFT.
4. TO FIND THE DISPLACEMENT, PROJECT THE POINT WHERE THIS STRAIGHT LINE INTERSECTS THE CENTER OF FLOTATION LINE HORIZONTALLY ACROSS TO THE MID-PERPENDICULAR LINE AND READ THE DISPLACEMENT AT THE NEAREST EVEN INCH. CORRECT THE DISPLACEMENT FOR FRACTIONS OF AN INCH BY THE USE OF THE TONS-PER-INCH SCALE. THE USE OF THE CENTER OF FLOTATION LINE AS DESCRIBED AUTOMATICALLY CORRECTS THE DISPLACEMENT FOR THE TRIM OF THE VESSEL.
5. THE RESULTING DISPLACEMENT IS FOR SEA WATER AT 35 CU. FT. PER TON (SPECIFIC GRAVITY 1.026). IF THE VESSEL IS NOT IN SEA WATER, THE SPECIFIC GRAVITY MAY BE OBTAINED WITH A HYDROMETER, AND THE DISPLACEMENT MULTIPLIED BY THE RATIO OF THE ACTUAL SPECIFIC GRAVITY TO 1.026.

CV 21
DRAFT DIAGRAM

REFERENCE PLANS	BU. SHIPS NO.
DISPLACEMENT & OTHER CURVES.	400912
SHIPS NAME & DRAFT MARKS.	395507
DOCKING PLAN.	522367

THE NEWPORT NEWS SHIPBUILDING & DRY DOCK CO.
NEWPORT NEWS, VA.
HULL TECHNICAL DEPARTMENT

DRAFT MARKS
& DRAFT DIAGRAM

SCALE AS SHOWN = 1 FT.
DRAWN ~
TRACED E.L. Grant
CHECKED A. Kreney
AUTHORIZED J. P. Comstock
DATE July 11, 1944.
DRAWING No. 10-1115
PRINTS ORDERED DATE BY

APPROVED
FOR CV 21
DATE 7-14-44
E L Gayhart
FOR SUPERVISOR OF SHIPBUILDING

AUG 29 1950

FINISHED PLAN
EXAMINED AND FOUND CORRECT
E. L. Gayhart
FOR SUPERVISOR OF SHIPBUILDING
DATE April 26, 1945

AIRCRAFT CARRIER CV 21

BU. SHIPS NO. 522368 ✓ W235d

2806
Filed MB